



SUPRA SERVER PDM

CICS Operator's Quick Reference
(OS/390 & VSE)

P26-7670-63




SUPRA[®] Server PDM CICS Operator's Quick Reference (OS/390 & VSE)

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We welcome your comments

We encourage critiques concerning the technical content and organization of this manual. Please take the [survey](#) provided with the online documentation at your convenience.

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Conventions

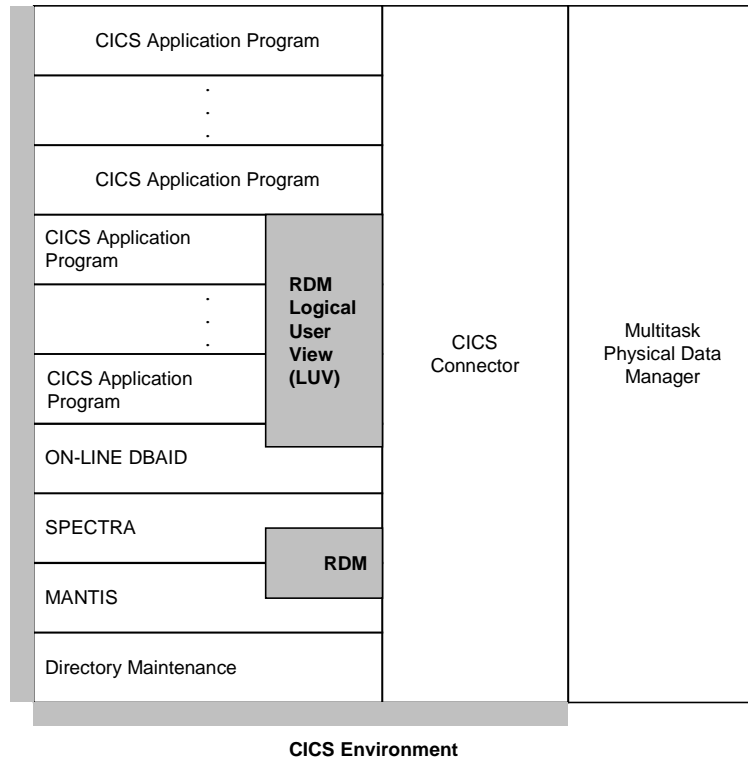
The following table describes the conventions used in this document series:

Convention	Description	Example
Constant width type	Represents screen images and segments of code.	<pre>PUT 'customer.dat' GET 'miller\customer.dat' PUT '\DEV\RMT0'</pre>
Slashed b (b)	Indicates a space (blank). The example indicates that four spaces appear between the keywords.	<pre>BEGIN NO SERIAL</pre>
Brackets []	Indicate optional selection of parameters. (Do not attempt to enter brackets or to stack parameters.) Brackets indicate one of the following situations:	
	A single item enclosed by brackets indicates that the item is optional and can be omitted.	[WHERE <i>search-condition</i>]
	Stacked items enclosed by brackets represent optional alternatives, one of which can be selected.	<pre>(<u>WAIT</u>) (NOWAIT)</pre>
Braces { }	The example indicates that you can optionally enter either WAIT or NOWAIT. (WAIT is underlined to signify that it is the default.)	
	Indicate selection of parameters. (Do not attempt to enter braces or to stack parameters.) Braces surrounding stacked items represent alternatives, one of which you must select.	<pre>MONITOR {ON OFF}</pre>
Braces { }	The example indicates that you must enter ON or OFF when using the MONITOR statement.	

Convention	Description	Example
Underlining (In syntax)	<p>Indicates the default value supplied when you omit a parameter.</p> <p>The example indicates that if you do not choose a parameter, the system defaults to WAIT.</p>	<pre>[WAIT] [NOWAIT]</pre>
	<p>Underlining also indicates an allowable abbreviation or the shortest truncation allowed.</p> <p>The example indicates that you can enter either STAT or STATISTICS.</p>	<pre>STATISTICS</pre>
Ellipsis points...	<p>Indicate that the preceding item can be repeated.</p> <p>The example indicates that you can enter multiple host variables and associated indicator variables.</p>	<pre>INTO :host-variable [:ind- variable],...</pre>
UPPERCASE lowercase	<p>In most operating environments, keywords are not case-sensitive, and they are represented in uppercase. You can enter them in either uppercase or lowercase.</p>	<pre>COPY MY_DATA.SEQ HOLD_DATA.SEQ</pre>
<i>Italics</i>	<p>Indicate variables you replace with a value, a column name, a file name, and so on.</p> <p>The example indicates that you must substitute the name of a table.</p>	<pre>FROM table-name</pre>
Punctuation marks	<p>Indicate required syntax that you must code exactly as presented.</p> <p>() parentheses . period , comma : colon ' ' single quotation marks</p>	<pre>(user-id, password, db-name) INFILE 'Cust.Memo' CONTROL LEN4</pre>
SMALL CAPS	<p>Represent a keystroke. Multiple keystrokes are hyphenated.</p>	<pre>ALT-TAB</pre>

SUPRA component overview

The following figure illustrates the relationship of SUPRA components and related products to CICS and the CICS Connector.



Solid dots indicate multiple programs.

CICS builds the operating environment for SUPRA components; the CICS Connector exists within that environment.

Relational Data Manager (RDM), SPECTRA, MANTIS, and Directory maintenance communicate with the Physical Data Manager (PDM) through the CICS Connector. CICS application programs and MANTIS use Relational Data Manipulation Language (RDML) commands to communicate with either RDM or the CICS Connector. SPECTRA uses only RDML commands to communicate with the CICS Connector through RDM. RDM and Directory maintenance communicate directly with the CICS Connector. The CICS Connector Communicates with the PDM.

Different tasks can execute the same CICS application program.

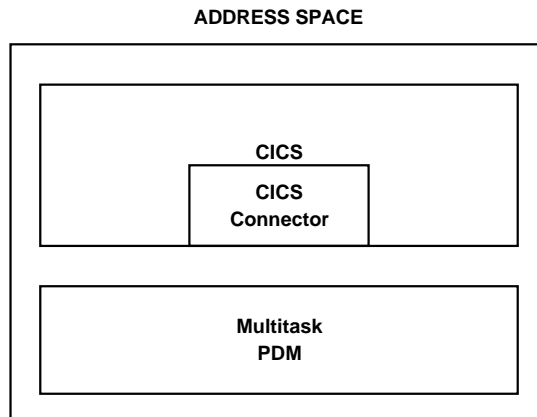
Operating modes

The PDM can operate in an attached, attached central, or central mode. The PDM is either attached under CICS as a separate operating system task in the same address space as CICS (attached mode), or the PDM runs in another address space (central mode).

Any number of CICS application tasks can access the same copy of the multitask PDM through the CICS Connector.

Attached operating mode

In the attached operating mode, CICS and the PDM reside in the same address space but as separate operating tasks with the PDM attached under the CICS task.



You attach the PDM by issuing the CONNECT operator control command. The CICS systems programmer can set up CICS to attach the PDM automatically at CICS initialization.

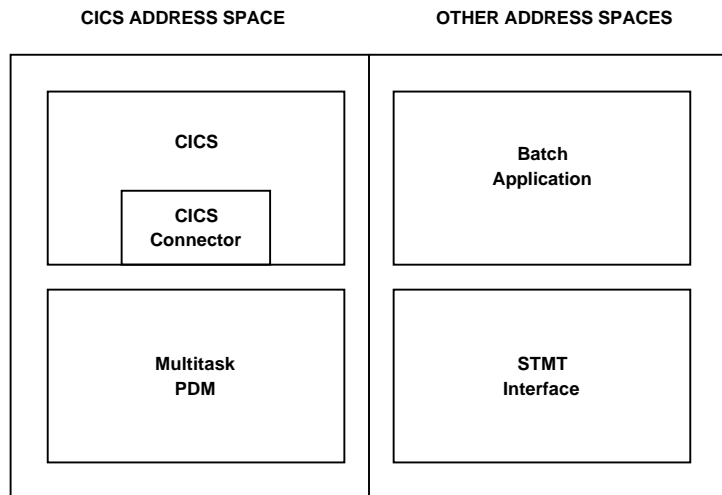
You detach the PDM by issuing the DISCONNECT command. The systems programmer can set up CICS to detach the PDM automatically at CICS termination. Whenever CICS terminates, whether normally or abnormally, the PDM also terminates.

Attached central operating mode

The attached PDM can be accessed as a central PDM by batch application programs or multiple copies of CICS.

In the attached central operating mode, the multitask PDM communicates with the CICS application task through that copy of CICS. The Connector associated with that copy of CICS attaches the multitask PDM as an operating system subtask.

Application tasks may reside in different address spaces from the one containing the multitask PDM.

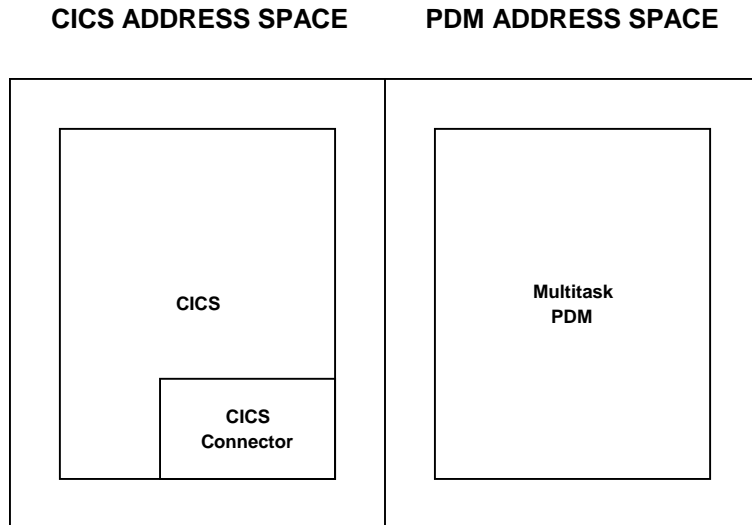


You attach the PDM by issuing the **CONNECT** command. The CICS systems programmer can set up CICS to attach the PDM automatically at CICS initialization.

You detach the PDM by issuing the **DISCONNECT** command. The systems programmer can set up CICS to detach the PDM automatically at CICS termination. Whenever CICS terminates, whether normally or abnormally, the PDM also terminates, regardless of any connections it has with tasks in other address spaces.

Central operating mode

In the central operating mode, CICS and the PDM reside in different address spaces. Any CICS Connector in the central mode can sign on to an active PDM. Then the CICS Connector is connected, CICS tasks can sign on to the PDM.



You attach the PDM by issuing the **CONNECT** command. The CICS systems programmer can set up CICS to attach to the PDM automatically at CICS initialization.

Only one copy of the PDM is connected at a time. However, any number of CICS application tasks, communicating through one or more copies of CICS, can access the same copy of the multitask PDM through the CICS Connector.

You can detach the PDM by issuing the **DISCONNECT** command. The systems programmer can set up CICS to detach the PDM automatically at CICS termination.

ABEND command

The ABEND command stops a Connector from functioning. Use it only if an interface malfunction jeopardizes the integrity of the database.

We recommend that you first attempt to issue a DISCONNECT command.

If you issue an ABEND command, you must also bring CICS down and restart it to reconnect CICS with the PDM.

ABEND

ABEND

Description *Required.* Stops the connector from functioning. An abend can occur only if the CICS Connector is connected. Enter ABEND or ABE.



WARNING: Use the ABEND command only in extreme circumstances. If you issue an ABEND command, you will not be able to use the CICS Connector until you bring CICS down and restart it.

CLOSE command

Use the CLOSE command to close individual database files or a group of files. The Operator Control Parameter Table (CSTXOTBL) contains file groups and their close modes. This command closes files only if the OPENX-OPTION=PROCESS is specified in the active environment description (contact your DBA for this information).

$$\text{CLOSE} \left\{ \begin{array}{l} \text{FILE} = \text{ffff} \left[\text{MODE} = \left\{ \begin{array}{l} \text{COMP} \\ \text{PART} \end{array} \right\} \right] \\ \text{GRO[UP]} = \text{ggggggggg} \end{array} \right\}$$

CLOSE

Description *Required.* Specifies a database file or group of files to be closed. Enter CLOSE or CLO. The CICS connector must be connected to close a file.

FILE = ffff

Description *Optional.* Names the database file you want to lose. Enter FILE or FIL and the 4 alphanumeric character file name. If you specify FILE, you cannot also specify GROUP.

MODE= $\left\{ \begin{array}{l} \text{COMP} \\ \text{PART} \end{array} \right\}$

Description *Optional.* Specifies the mode used to close the database file. Enter MODE or MOD.

Use COMP if this is an operating system close. COMP unlocks the file, if necessary, and resets the file mode to null. A task may access the file only to open it.

Use PART if this is not an operating system close. PART unlocks the file, if necessary, and resets the file mode to IUPD. Any task may read the file, but no task may update it.

If you specify MODE, you must specify FILE, and you cannot specify GROUP.

GROUP = gggggggg

Description *Optional.* Names the group of files you want to close. Enter GROUP or GRO and the 1–8 alphanumeric character group name. If you specify GROUP, you cannot specify FILE or MODE.

If an error occurs while closing any file in a group, all files return to their original status. The name of the file receiving the error is displayed with a message. The CICS Connector Activity Audit Trail lists all CLOSE commands and resulting messages.

Consideration Whenever an index file is opened for SUPD and a partial CLOSE (PART) is done, the index file will remain locked. To unlock the index file, you must completely close all primary and related files with secondary keys stored in the index file (COMP).

CONNECT command

Use the CONNECT command to connect the CICS connector to the PDM. If the CICS systems programmer has set up the CICS Connector for automatic connection at CICS initialization, the CONNECT command is issued with default values. Refer to the Operator control Parameter Table (CSTXOTBL) for the default values.

This command is ignored if the CICS Connector is connected. To see if the CICS Connector is connected, issue a STATUS command.

**CONNECT [THREADS = *n*] [,TASKS = *n*] [MEME = *n*] [,TFUL = *n*]
[,CFUL = *M*] [,ICOR = *n*]**

CONNECT

Description	<i>Required.</i> Connects the CICS Connector to the PDM. Enter CONNECT or CON.
--------------------	--

THREADS = *n*

Description	<i>Optional.</i> Specifies the number of threads for communication between the CICS Connector and the PDM. Defaults to the value of the THREADS parameter of CSTXOTBL.
--------------------	--

Enter THREADS or THR and a numeric value of 1–32767.

TASKS = *n*

Description	<i>Optional.</i> Specifies the maximum number of CICS tasks that may be signed on to the PDM at any one time. Defaults to the value of the TASKS parameter of CSTXOTBL.
--------------------	---

Enter Tasks or TAS and a numeric value of 1–32767.

MEME = *n*

Description *Optional.* Specifies the maximum number of 64K extensions the Connector will automatically attempt before returning the ICOR status.

Enter MEME or MEM. For *n*, enter a numeric value of 0–99 for the number of 64K extensions.

Considerations

You can still receive the ICOR status. The MEME parameter concerns only memory blocks for the CICS Connector.

The OPER STAT command displays memory usage and should be monitored.

TFUL = *n*

Description *Optional.* Specifies the maximum number of retries if a TFUL status occurs (if there are not enough threads available). Defaults to the value of the TFUL parameter in CSTXOTBL.

Enter TFUL or TFU and a numeric value of 0–32767. The CICS Connector always tries each PDML command once and then retries as many times as necessary, up to the value of *n* in this parameter.

CFUL = *n*

Description *Optional.* Specifies the maximum number of automatic retries if a CFUL status occurs (if there are not enough threads available). Defaults to the value of the CFUL parameter in CSTXOTBL.

Enter CFUL or CFU and a numeric value of 0–32767. The CICS Connector always tries each PDML command once and then retries as many times as necessary, up to the value of *n*.

ICOR = *n*

Description *Optional.* Specifies the maximum number of automatic retries if an ICOR status occurs (if there is not enough memory available). Defaults to the value of the ICOR parameter in CSTXOTBL.

Enter ICOR or ICO and a numeric value of 0–32767. The CICS Connector always tries each PDML command once and then retries as many times as necessary, up to the value of *n*.

DISCONNECT command

Use the DISCONNECT command to disconnect the CICS Connector from the PDM. When the PDM is in the attached mode, DISCONNECT ends the PDM, then detaches it. Any applications using this PDM as a central operating mode receive NOTO.

If the CICS systems programmer has set up an automatic disconnection when CICS terminates, you need not issue an explicit DISCONNECT command unless you want to disconnect and still keep CICS running. This command is ignored if the CICS Connector is disconnected and will write a warning message on the CICS Connector Activity Audit Trail. If you issue the command, the warning message will also appear on your terminal.

<u>DISCONNECT FORCE</u> =	<table><tr><td>YES</td></tr><tr><td><u>NO</u></td></tr><tr><td>AUTO</td></tr><tr><td>SINF</td></tr></table>	YES	<u>NO</u>	AUTO	SINF
YES					
<u>NO</u>					
AUTO					
SINF					

DISCONNECT

Description	<i>Required.</i> Disconnects the CICS Connector from the PDM. Enter DISCONNECT or DIS.
--------------------	--

FORCE = $\left. \begin{array}{c} \text{YES} \\ \text{NO} \\ \text{AUTO} \\ \text{SINF} \end{array} \right\}$

Description *Optional.* Defines the type of disconnect. Enter FORCE or FOR and include an option.

YES (or Y) disconnects the CICS Connector from the PDM even if CICS tasks are signed on.

NO (or N) disconnects the CICS Connector only if no CICS tasks are signed on. NO is the default.

AUTO (or A) disconnects the CICS Connector whenever all currently signed-on CICS tasks issue a sign-off. FORCE = AUTO frees the terminal for other activity.

SINF (or S) resets and signs off existing tasks signed on the PDM.

Using FORCE = YES for FORCE = NO displays run-time statistics after a successful disconnection. These are also written on the CICS Connector Activity Audit Trail. See the STATUS command for a list of run-time statistics.

If you use FORCE = AUTO and the PDM shows active tasks but the interface shows none, the system changes FORCE = AUTO to FORCE = YES. If FORCE = SINF is successful, it converts to a FORCE = NO. If FORCE = SINF is not successful, it converts to a FORCE = YES. SINF and AUTO also prevent new sign-ons.

DUMP command

Use the DUMP command to place a dump of all main memory areas used by the CICS Connector on the CICS Transaction Dump Data set. The CICS Connector must be connected to the PDM for the DUMP command to be effective. DUMP does not interfere with the normal operation of the Connector.

DUMP

DUMP

Description *Required.* Writes the contents of the CICS Connector memory areas to the CICS Transaction Dump Data set. Enter DUMP or DUM.

Consideration DISCONNECT FORCE = YES, OPEN, CLOSE and ABEND processing may internally issue the DUMP command for certain conditions to provide additional problem assistance.

OPEN command

Use the OPEN command to open individual data base files or a group of files. The Operator Control Parameter Table (CSTXOTBL) contains file groups and their open modes. This command opens files only if the OPENX-OPTION = PROCESS is specified in the active environment description.

$$\text{OPE[N]} \left\{ \begin{array}{l} \text{FILE} = \text{ffff} \left[\text{MOD[E]} = \left\{ \begin{array}{l} \text{IUPD} \\ \text{SUPD} \\ \text{READ} \end{array} \right\} \right] \\ \text{GRO[UP]} = \text{ggggggggg} \end{array} \right\}$$

OPEN

Description *Required.* Opens data base files. Enter OPEN or OPE. The CICS Connector must be connected to open a file.

FILE = ffff

Description *Optional.* Names the data base file you want to open. Enter FILE or FIL and the 4 alphanumeric character file name. If you specify FILE, you cannot also specify GROUP.

$$\text{MOD}[E] = \left\{ \begin{array}{l} \text{IUPD} \\ \text{SUPD} \\ \text{READ} \end{array} \right\}$$

Description *Optional.* Specifies the mode used to open the SUPRA file. Enter MODE or MOD.

Use IUPD to mark the file for read only. The file can be read by all tasks but cannot be updated by any task using this PDM. The file will not be locked. Refer to the OPENX command in the *SUPRA Server PDM DML Programming Guide (OS/390 & VSE)*, P26-4340.

Use SUPD to mark the file for shared updating. The file is locked and can be updated by any task using the same copy of the PDM. SUPD is the default.

Use READ to mark the file for read only. The file can be read by any task but cannot be updated by any task using this PDM. The file is not locked. Refer to the OPENX command in the *SUPRA Server PDM DML Programming Guide (OS/390 & VSE)*, P26-4340.

Consideration If you specify MODE, you must specify FILE.

GROUP = gggggggg

Description *Optional.* Names the group of files you want to open. Enter GROUP or GRO and a 1-8 alphanumeric character group name.

If you specify GROUP, you cannot specify FILE or MODE.

If an error occurs while opening any file in a group, all files return to their original status. The name of the file receiving the error is displayed with a message. The CICS Connector Activity Audit Trail lists all OPEN commands and resulting messages.

STATUS command

Use the STATUS command to check if the CICS Connector is connected (active) or disconnected (inactive).

If the Connector is connected, the STATUS command lists run-time statistics. Using the STATUS command will not reset run-time statistics.

STATUS

STATUS

Description *Required.* Checks whether or not the CICS Connector is connected. Enter STATUS or STA.

The following statistics will appear on your terminal and on the CICS Connector Activity Audit Trail:

- ◆ Number of tasks signed on to the PDM
- ◆ Number of CFUL statuses automatically retried
- ◆ Number of CFUL statuses returned to the application
- ◆ Number of TFUL statuses automatically retried
- ◆ Number of TFUL statuses returned to the application
- ◆ Number of ICOR statuses automatically retried
- ◆ Number of ICOR statuses returned to the application

System recovery

CICS abends

Should the CICS system abend, restart it using the recovery procedures defined by your systems programmer. If the PDM detects a CICS system abend, it automatically recovers PDM resources.

After restarting CICS, use the `CONNECT` command to reconnect the CICS Connector to the PDM unless the default is set to automatic connect.

PDM abends

Should the PDM abend while the CICS Connector is connected to it, the Connector will detect the abend. All pending PDML commands as well as all PDML commands issued after the PDM failure will receive a NOTO status.

Begin recovery by issuing the `DISCONNECT` command to disconnect the Connector from the PDM. If the PDM is running under the attached mode, issue the `CONNECT` command to restart the PDM and reconnect the Connector. If the PDM is running in the central operating mode, restart the PDM and then issue the `CONNECT` command.

If task logging is turned on and you have successfully restarted the PDM, the PDM will recover all PDM resources for all tasks signed on at the time of failure. Tasks signed on but not issuing a `COMMIT` will be signed off.

Concurrent CICS and PDM abends

If CICS and the PDM abend concurrently, restart CICS using the recovery procedures defined by your systems programmer. Restart the PDM using the instructions for recovering PDM system abend.

If the CICS systems programmer specified “automatic connect” as the default at CICS initialization, the CICS Connector is reconnected and you do nothing else. Otherwise, issue the `CONNECT` command to reconnect the Connector to the PDM.

Collecting problem resolution data

The CICS Connector writes numbered messages to the operator console or to the CICS Connector Activity Audit Trail. Refer to the *SUPRA Server PDM Messages and Codes Reference Manual (RDM/PDM Support for OS/390 & VSE)*, P26-0126, for message descriptions.

Whenever a CICS task abends, use the following to collect the information necessary to identify and solve the problem.

Operator console

The system operator console receives PDM messages from the CICS Connector. These messages are helpful when operating the CICS Connector.

CICS Connector activity audit trail

The CICS Connector Activity Audit Trail is a hardcopy listing of all CICS Connector status and activity messages. These messages confirm connection, disconnection, and abends, and report the actions taken during recovery. This report includes all operator control commands issued and their responses from the Operator Control Program.

CICS dumps with a code of 0998

If you get an abend code of 0998, immediately issue the DUMP command. Depending on the severity of the 0998 abend, you will receive one of two messages in response:

- ◆ Message indicating normal completion (CSTX0301) of the dump request
- ◆ Message indicating that the Connector has disconnected (CSTX0231)